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ABSTRACT

A study examined the influence of organizational context on professionals' determination of appropriate style and technical content for external correspondence. Subjects were 200 architects and engineers employed by a state government agency whose mission is to provide design and construction management services to state facilities. Data were triangulated through analyses of writing samples and discourse-based interviews, observational notes, participants' questionnaire responses, and informal interviews with key informants. Results showed that although the subjects considered their report letters to other state agencies and contractors to be "technical" documents, they reported that they did not know the level of technical expertise of their intended audiences, or, if they did know, this understanding did not greatly influence their determination of appropriate style and technical content. Instead, the subjects reported that they typically decided the extent of technical material and the stylistic strength with which that material was presented based on three factors: (1) the writer's perception of his or her role in relation to the reader's role, as defined by the organization; (2) the writer's perception of the roles the document plays in the design and construction process and in the discourse chain associated with the specific project; and (3) the writer's perception of the document's relation to other discourses and other past, present, and future documents. (Author/FL)

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Abstract

Technical Ethos in a Bureaucratic Setting: The Effects of Organizational Context

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This presentation reports on a quasi-ethnography which examined the influence of organizational context on professionals' determination of appropriate style and technical content for external correspondence. Participating in this four-month study were 200 architects and engineers employed by a state government agency whose mission is to provide design and construction management services to state facilities. Data were triangulated through analyses of writing samples and discourse-based interviews, observational notes, participants' questionnaire responses, and informal interviews with key informants.

Although these professionals considered their report-letters to other state agencies and contractors to be "technical" documents, writers reported either that they did not know the level of technical expertise of their intended audiences or that, if they did know, this understanding did not greatly influence their determination of appropriate style and technical content. Instead, a writer typically decided the extent of technical material and the stylistic strength with which that material was presented based upon three factors: (1) the writer's perception of his or her role in relation to the reader's role, as defined by the organization; (2) the writer's perception of the roles the document plays in the design and construction process and in the discourse chain associated with the specific project; and (3) the writer's perception of the document's relation to other discourses and other documents, past, present, and future.

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Introduction

I'd like to report today on a research project I conducted which involved a group of engineers and architects who work for a State government agency. The study examined the influence of organizational context on technical writers' determination of appropriate style and technical content for external correspondence. The methodology was quite extensive, involving a series of quasi-ethnographic approaches to data collection and analysis. The end result of any ethnography is thick description, a detailed account of phenomena and the meaning of phenomena within the particular setting under study (Geertz, 1973). Obviously, we don't have time now for such a lengthy account, so I would like to limit discussion to some key findings of the study.

Study Subjects: This research was conducted in conjunction with consulting work I performed for a State government agency during a four-month period. I had the opportunity to put on a series of writing workshops with about 200 architects, engineers, and their supervisors. These technical writers represented the two main subdivisions of the contracting State agency, accounting for about one-third of the professional staffs in their respective divisions. Design personnel, primarily architects and trade engineers, were responsible for translating the needs of the

client--another State agency--for new facilities and major renovation into a program upon which the design and construction of a facility could be based. This design work involved defining the scope of a project and preparing budget estimates, working drawings, and specifications. The second division, Construction, consisted of field engineers who supervised and inspected these construction projects once they were underway. This mainly involved managing projects to ensure that contractors completed their work in accordance with specifications.

My workshops with these writers centered on their own writing. Much of our in-class time was devoted to discussing how the work environment affected the substantive and stylistic choices writers made. This format allowed me to question participants about their attitudes toward writing, their understanding of and sensitivity to rhetorical context, and their perceptions of organizational influences on writing.

Method: I used various quasi-ethnographic methods to collect data in these areas. An ethnographic approach allows the researcher to enter a site with a broad-based theoretical framework but requires him or her to refine the focus of the investigation based on emerging constructs as presented by the population under study. My basic assumptions upon entering this site were that writing is context-bound, that it is both a product and process of the community or organization that it supports, and that it cannot be studied in isolation from its organizational context. Because my position as consultant limited my stance as participant-observer and confined my contact with study subjects

primarily to the artificial environment of the conference room, I could not rely on strict ethnographic methods of observation to collect data. I also suspected that my presence as a consultant would influence what writers told me. These limitations required that I conduct a "quasi-ethnography"--a study that "adopts some or all of the methods common to classical ethnography [but] combines them with other methods and theoretical frameworks in an interdisciplinary approach" (Goetz & LeCompte, 1984, p.18).

My qualitative methods of data collection included recording observational notes during some 250 hours on site; conducting informal interviews with key informants; collecting and analyzing organization policies and procedures, and more than 300 writing samples from participants; and using a modified version of the discourse-based interview (see Odell, Goswami, & Herrington, 1983).

Because I could not rely on these methods alone to establish internal validity, given the limited application of classical ethnographic approaches to this study, I also used quantitative methods to triangulate constructs derived qualitatively. These methods included a pre-workshop questionnaire, which I routinely administer in conjunction with consulting work, and a formal analysis of a random sample of participants' letters to client agencies and contractors.

The questionnaire contained 41 closed-ended questions and two open-ended questions. Instructions encouraged respondents to make additional comments at the end of each question to supplement or to substitute for available options. Respondents were asked to designate the single writing task that they were most

familiar with and performed most often. Based on this task, they provided information about their awareness and understanding of its rhetorical context, their writing processes, and the extent to which they collaborate with co-workers and supervisors while writing this type of document. For the purposes of the study, I examined questionnaire responses for the range of writing performed by Design and Construction personnel (N = 181) and compared these to a sub-sample that dealt primarily with external correspondence (N = 86). A Student t-test was performed on differences among rank-order item responses, while differences in variance of nominal responses were tested using chi square.

I also analyzed a random sample of 30 letters collected from participants to determine their degree of technical content, sources of authority, stylistic strength, and rhetorical sensitivity. The results of this analysis were compared to what writers themselves perceived as the technical and rhetorical makeup and style of their letters, as revealed through discussions about their writing and through their questionnaire responses. To determine technical content and sources of authority, I examined the frequency of references to formal or contractual documents (specifications, contracts, drawings, codes, change-orders, budget estimates, etc.); specific or general references to sections, locations, materials, necessary actions, or procedures from formal or contractual documents; direct or indirect quotations from formal or contractual documents; and references to previous discourse (phone conversations, formal or informal meetings, letters, and directives). To assess the stylistic strength and rhetorical

sensitivity of these letters, I examined the frequency of active and passive constructions, forms of writer-reference (first-person; writer as third-person; first-person plural; writer's agency, division, district office, or immediate office; and the State for which the writer worked), and forms of reader-reference (direct address, reader as third-person, and reader's agency, firm, or representative.)

Preliminary Findings

As I worked with more and more writers during the four-month workshop series, certain patterns seemed to emerge in their comments and concerns. When questioned about their audiences, writers repeatedly seemed confused about who these audiences actually were, what they needed, and their levels of expertise. In fact, writers often indicated that understanding of audience was not even a concern. Many perceived their supervisors to be the main audience, because most documents, especially correspondence, underwent a series of supervisory reviews which often resulted in substantive and stylistic changes. Writers seemed more interested in meeting the needs of their supervisors than the needs of primary readers. This was partly due, participants indicated, to the fact that clients and contractors sometimes knew beforehand the information being transmitted based on previous contact between writers and readers. The correspondence served only to document this exchange.

Our discussions about audience typically involved consideration of appropriate style and technical content. Some writers either complained that they could not present data and recommen-

dations with the stylistic strength they felt justified by their own level of technical expertise. Others defended the existing style and content of a document based on their perceptions of what their organization, as represented by their supervisors, considered appropriate.

It became evident from these types of comments that a writer in this environment was more apt to determine appropriate style and technical content based upon organizational influences than upon his or her awareness and understanding of the primary audience's level of technical expertise. These influences seemed to be:

(1) the writer's perception of his or her role in relation to the reader's role, as defined by the organization;

(2) the writer's perception of the roles the document plays in the design and construction process and in the discourse chain associated with the specific project;

(3) the writer's perception of the document's relation to other discourses and documents, past, present, and future.

Because Design and Construction personnel wrote to different external audiences and perceived their letter-writing roles differently, I thought that an examination of their stylistic and substantive choices for letters might help expose the extent of organizational influence and might define the forms that this influence took. Design personnel seemed to consider themselves essentially to be "ghost" writers; their names seldom appeared on their letters except as third-person references. Further, they considered their audiences to be "ghost" readers, since writers

could never be sure who, exactly, would read and use the document. Although the ultimate reader at the client agency potentially could be an architect or engineer, writers knew that their letters would be filtered through many non-technical audiences.

Such written exchanges between designer and client were highly structured, dictated by policy. Although the content was technical in nature, the style often seemed indirect, marked by passive constructions and absence of human agency (e.g., lack of first-person reference and of direct address of the reader). These letters typically reported information and made polite recommendations or requests.

Construction division letters, although they seemed equally as technical, placed more emphasis on assigning human agency. These letters relied often on first-person reference and direct address of readers, with whom Construction writers had personal contact on almost a daily basis. Although policy guided when a Construction engineer should write to a contractor, the occasion for such correspondence was determined more by exigence than by policy. Letters generally were more context-oriented, referring often to previous discussions between letter writer and reader.

Results of Quantitative Analyses

Rhetorical Sensitivity: Construction questionnaire respondents generally were more familiar with their audiences than Design personnel and considered their audiences to be more technically expert. Respondents were asked how much information they could

provide about the general behavior, attitudes, and background of the type of audience who was most apt to read their letters. There was a significant difference at the .001 level between the mean rankings of the Design and Construction groups (t = 16.5653). Construction respondents indicated that they could provide "much" or "some" information about their letter audiences, while Design respondents said they could provide only "some" or "little" information.

Respondents were also asked to characterize their specific audiences. While both groups generally considered their letter audiences to be "professional acquaintances or colleagues," the Design group seemed less familiar with their readers. More than half of the Design respondents indicated they did not know their primary reader except through their familiarity with the reader's position. Only one-fourth of the Construction respondents chose this option. This difference was significant at the .05 level (X = 5.029).

There was also a significant difference at this level between respondents' classifications of their audiences regarding prior knowledge of the type of subject matter addressed in letters (X = 4.5866). The Construction group considered contractors to be "very experienced," while Design respondents considered their clients to be less experienced.

Although Design personnel recognized that their letter audiences were primarily non-technical, they considered their letters to be more technical than other documents they compose on the job. When asked to select from a list of 26 paired attributes those five or six that best characterized how their writing might

sound to their specific audiences, Design respondents generally indicated that their letters would sound more "technical" than other documents they write ($X = 8.841$). This difference was significant at the .005 level. However, Design respondents also considered their letters to be more "explanatory" than other documents ($X = 5.011$; $p < .05$), which may reflect an attempt to support the technical recommendations with non-technical explanations. Such concessions to audience were apparent in letter samples collected from participants.

Construction respondents also perceived their letters as sounding "technical" and "explanatory," although they considered their correspondence to be more "decisive" ($X = 8.997$; $p < .005$) and more "confident" ($X = 7.078$; $p < .01$) than internally-directed documents.

Technical Content and Sources of Authority: It is interesting to note that, although Design questionnaire respondents generally were less knowledgeable than Construction respondents about specific letter audiences, and typically considered these audiences to be non-technical, Design letters were considerably more technical than Construction letters. In addition, these letters relied more on existing documentation and less on actual contact between letter writer and reader. This increased emphasis on existing documentation and decreased emphasis on the operational context may reflect both the function of Design letters in the overall design process and the writer's role in that process, since the scope defined by these letters will eventually inform the prime core document for the project--the specifications.

While the sources of authority for Construction letters often came from formal or contractual documents and from direct contact with the letter reader or his or her representative, Design writers were more apt to refer to formal or contractual documents than Construction writers and less apt to rely on previous contact between writer and reader. On the average, Construction letters contained about one-third the number of references to specific or general locations, materials, procedures, needed actions, and conditions as did the Design letters. While Design letters contained 3.99 such references per T-unit, Construction letters contained only 1.64 per T-unit.

Forms of Writer and Reader Reference: Overall, Design writers made twice as many writer-references per letter as Construction writers, although the difference between the average numbers of such references per T-unit for Design and Construction was quite small. The fact that Design letters generally were much longer than Construction letters may account for the high number of writer-references.

Recommendations in Design letters contained far fewer writer-references than did directives in Construction letters. This is especially important to consider because the main purposes of these letters were to provide recommendations and directives.

Construction writers used the first-person sparingly in their letters, while Design writers never used this form of reference. Design writers relied most heavily on the first-person plural, writer as third-person, and references to their of-

fice. Construction writers also relied on the first-person plural and references to their office, but to a lesser degree than Design writers.

Questionnaire respondents from both groups thought first-person references were used more frequently in their letters than they considered appropriate, although the Construction respondents indicated that use of first-person occurs more often in their letters than in other forms of writing and that it is more appropriate for letters. Overall, fewer Design than Construction respondents said they were inclined to use first-person.

The use of direct address of the reader was not extensive for either group, although more Construction than Design respondents said they used direct address in their letters ($X = 4.643$). This difference was significant at the .05 level. In addition, more Construction than Design respondents felt direct address was appropriate for their letters ($X = 9.789$; $p < .001$).

The results of writing sample analyses support this. Construction writers used direct address in nearly every letter, for an average of about two such usages per letter. Design writers used direct address in fewer letters, and its usage was usually associated with polite requests for response from the reader (e.g., "If there are any questions, kindly contact this office.").

Construction writers tended to refer more often to the letter reader's agency, facility, or representatives than did Design writers. Construction writers also referred more often to previous exchanges of information between writer and reader. Refer-

ences to directives and to meetings between writer and reader, or his/her representative, accounted for about 60% of the total references to previous communication in Construction letters. This finding, along with the finding for the use of direct address, indicates that Construction writers may be more sensitive to the immediate rhetorical context while composing.

Stylistic Strength: One questionnaire item asked respondents to choose from a list of stylistic elements those that most often occurred in their own writing, while a second item asked respondents to indicate for the same list of elements those they considered most appropriate for their writing. These items included active and passive constructions, direct address of reader, and use of first-person reference.

Design respondents generally said they preferred the passive over active voice for their letters. Although Construction writers reported that the active voice does not appear often in their general writing, half of the letter sub-group respondents said they used active voice in their letters ($X = 4.264$). This difference was significant at the .05 level.

In practice, Construction writers use the active voice more often than do Design writers. Of the total T-units counted in Construction letter samples, 55% were active constructions, while 45% were phrased in passive voice. Of the total T-units in Design letters, only 37% were in the active voice, while 63% were passive.

Although the overall purpose of Design and Construction letters was to provide information, Design letters typically

recommended actions to be included in the project specifications, while Construction letters directed contractors to perform actions required by the specifications or in response to an exigent situation. Because these purposes seemed so integral to the job responsibilities of Design and Construction writers, I tried to isolate recommendations and directives from letters so that I could examine their general positioning, sources of support, and the stylistic strength of their presentation.

Directives in Construction letters nearly always occurred at the end of the letter and were phrased about twice as often in the active as in the passive voice. Support for these directives came from two sources: "fact," which writers often reconstructed from previous correspondence, conversations, meetings, daily logs, and contractual documents; and threat, which often took the form of withholding payment.

Design recommendations seldom appeared at the end of a document and were phrased in the passive three times more often than in the active voice, with one letter containing half of the passive constructions counted. Recommendation statements often were used to introduce long lists of work which designers felt should be included in the project scope. A phrase such as, "It is recommended that the following be done," would serve to introduce a list that could run several pages long.

Even when Design writers used active constructions for recommendations, they tempered them with a congenial form (e.g., "Please inform this office when access to the building will be available.") or with a conditional modal auxiliary (e.g., "We would suggest...."). On the other hand, some passive recommenda-

tions acquired strength through the use of the obligatory modal auxiliary "should" (e.g., "Minor recaulking and caulking of the first floor sills should be included in the roofing project."). However, most such constructions did not assign responsibility for who would take action, for who should require or consent to action, or even for who was making the current recommendation (e.g., "In order to provide hot water to existing fixtures, it will be necessary to remove all fixtures...."). The lack of any form of human agency in such recommendations was indicative of the overall absence of context-setting elements in Design letters.

Collaboration and Enculturation

Questionnaire respondents reported that they learned how to write specific on-the-job tasks primarily from three main sources: on-the-job experience, from co-workers, and from supervisors as part of the editing-cycling process. Some two-thirds of the respondents in each group said they learned how to write job-related documents through work experience. Percentages dropped slightly for the letter sub-sample, but they still remained relatively high. Most respondents in each group also reported that the main source of their knowledge of the type of reader for letters was "general work experience."

Although more Construction than Design writers indicated they rely on "direction from supervisors," among other aids, while composing, the editing-cycling process seemed to be an important aspect of the overall composing process for each group. More than one-third of the Design respondents and one-half of the

Construction respondents said they rely on their supervisors while writing (X = 4.079). This difference was significant at the .05 level. There was also a significant difference at this level when the extent of overall collaboration for each group was compared by combining responses for the option "feedback from co-workers" with those for "direction from supervisors." Nearly three-quarters of the Construction respondents and one-half of the Design respondents said they rely on either or both of these two types of collaboration (X = 5.452).

Evaluation of Writing Effectiveness: It is interesting to note that when asked who decides whether or not their writing has been effective, the vast majority of respondents in each group (83.33% of Design and 87.62% of Construction) did not choose the option "clients/users." These percentages increased for the letter sub-groups. As one Construction respondent wrote next to the "client/users" option: "I sure hope not." According to respondents, their supervisors were responsible for deciding writing effectiveness, not the primary readers.

Conclusion

From these results it is clear that organizational context exerted a strong influence in shaping the attitudes of writers in this environment. In the case of Design letters, however, the goals of the organization seemed to be at odds with writers' perception that this form of document was inappropriate for the discourse occasion. Many Design writers considered their letters to client agencies as perfunctory, almost ceremonial in nature;

although some recognized the importance of these letters in translating the client's desires and their own knowledge of design into adequate specifications and drawings, writers generally thought that what these letters accomplished could more easily be done through direct contact with the specific readers. Design writers also recognized that they had no formal authority to direct clients to follow their recommendations. Consequently, they wrote these letters not because they believed them to have an important function in the designer-client exchange, but because policy dictated that they do so. However, such documentation allowed the organization not only to keep a careful record of the forming design scope for a project, as determined by both client and designer, but also demonstrated that the proper procedure had been followed. This ensured that, should a project go late to bid or should a client claim after a contract had been awarded that the scope was inadequate, the Design division would not be held accountable.

Policy also determined, to a great extent, when Construction engineers should write to contractors. But because the organization assigned greater importance to these letters than to Design letters, Construction writers considered the successful completion of these documents to be very important to their overall job functions. They recognized that, because the contractor was located outside the State government structure and because, as representatives of the State, they were responsible for managing the contractor's actions, they held the formal authority to ensure that the contractor followed their directives. Writers also often indicated the importance of documenting all contact

between field engineer and contractor because this documentation could protect the State should legal proceedings ensue. The stylistic strength and technical content of a letter reflected its importance in the communication chain as well as defined, in no uncertain terms, the relation between the writer's role and the reader's role.

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